

Nova Scotia 2013 Pavement Preservation

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Transportation and Infrastructure Renewal

Introduction

- Pavement preservation treatments
- 2013 preservation totals
- 2013 project reviews
- 2014 budget / spec. changes / new treatments
- Summary



Pavement Preservation Treatments

- Micro-surfacing: 2 year warranty spec.
- Seal Coat (Type A & B): 1 year warranty spec.
- Department's in-house pavement preservation program:
 - Seal Coat introduced 2011
 - Single lift asphalt paving 2012

Pavement Preservation

Unlike many other provinces, the Province of Nova Scotia is responsible for maintaining the majority of all public roads in the province (90 per cent)—23,000 kilometres. The cost per kilometre is over \$300,000 to repave, \$500,000 to \$750,000 or more to upgrade a trunk highway, and \$3 million to twin a highway. While severely damaged roads will continue to be addressed, a portion of our highway improvement budget will be set aside to help improve paved roads before they become too damaged and need more costly repairs. The approach is ensuring that funding is used more efficiently and effectively. It is more sustainable in the long term.

Pavement Preservation is cost effective. Spending one dollar on pavement preservation before a paved road is 15 years old can eliminate or delay having to spend 6 to 14 dollars on rehabilitation or reconstruction when the pavement surface has failed.

Preservation techniques can extend the life of asphalt, improve smoothness, reduce potholes and decrease rutting and cracking. Roads stay smoother and safer at a much lower cost than by allowing them to deteriorate to the point of needing full reconstruction.

Pavement Preservation

Crack sealing: rubberized asphalt seal compound prevents water from penetrating the paved surface and weakening of the road base

Chip sealing: asphalt mixture with stone chips applied to protect and seal pavement showing minor distress

Micro sealing: thin asphalt mixture applied to existing pavement that is showing signs of premature surface distress, to protect pavement and repair ruts

Single lift overlay: single layer of asphalt pavement to correct minor-to-moderate surface distress in relatively good quality pavement

Maintenance Paving: placing a single lift of asphalt on rougher road sections to improve the ride

Surface Stabilization

Surface stabilization involves using many methods to improve local low-volume roads leading to smoother, dust-free roads for drivers and communities

Black gravel: mixture of recycled asphalt and gravel that provides additional strength, improves driving surface and emits very little dust

Double chip seal paving: aggregate mixed with tar applied over gravel for a smoother dust-free surface and reduced potholes; or mixed with gravel and applied over pulverized asphalt, which does all of the above and adds strength

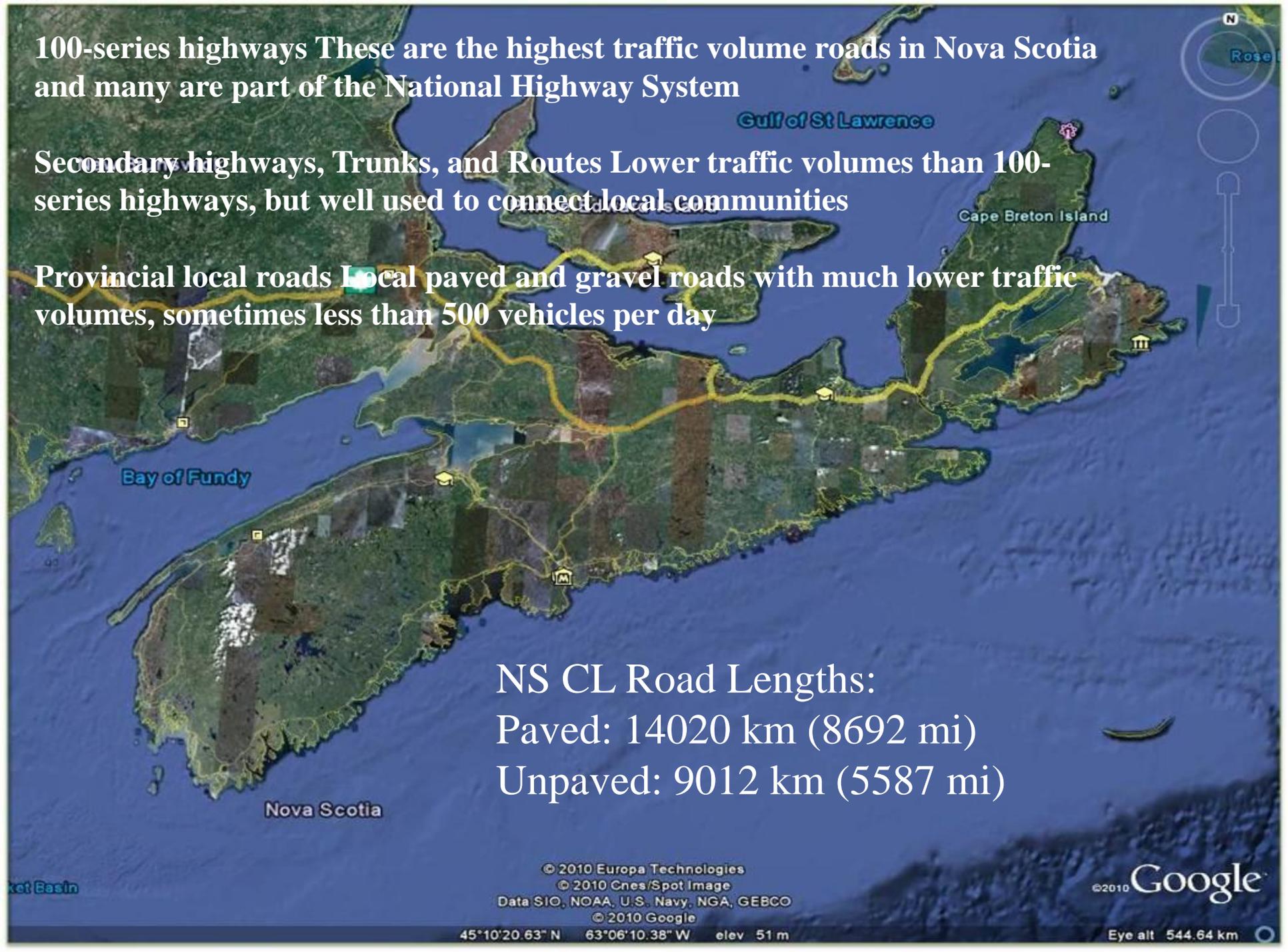
Asphalt concrete paving: applying one or more layers of asphalt to strengthen and smooth the surface; includes improvements to drainage culverts and ditches

100-series highways These are the highest traffic volume roads in Nova Scotia and many are part of the National Highway System

Secondary highways, Trunks, and Routes Lower traffic volumes than 100-series highways, but well used to connect local communities

Provincial local roads Local paved and gravel roads with much lower traffic volumes, sometimes less than 500 vehicles per day

NS CL Road Lengths:
Paved: 14020 km (8692 mi)
Unpaved: 9012 km (5587 mi)



2013 Preservation Treatment Totals

Type:	Projects:	CL Length (mi.):
	Tendered Projects:	
Micro-Surfacing:	5	51
Seal Coat Type A:	3	23
Seal Coat Type B:	9	72
CIR:	2	7
FDR:	6	22
	NSTIR:	
Seal Coat Type A:	30	114
Thin Lift Overlay:	20	54

Stephen McNeil leads Liberals to majority in Nova Scotia

Progressive Conservatives form Official Opposition while New Democrats trail in 3rd

CBC News Posted: Oct 08, 2013 4:23 PM AT | Last Updated: Oct 09, 2013 9:21 PM AT



RAW: Meet Nova Scotia's Premier-designate 10:52



Nova Scotia's new premier-designate 8:02

Nova Scotians have given Stephen McNeil and the Liberals a decisive victory with a majority government, turfing Atlantic Canada's first NDP government and tossing Premier Darrell Dexter out of his own seat in Cole Harbour-Portland Valley.

"The people of Nova Scotia have agreed with our plan to put Nova Scotia first," Premier-designate McNeil told the cheering group crowded into the Bridgetown Curling Club.

"It is with a deep sense of responsibility and purpose that I will make certain our plan is delivered and that our commitments are kept."

McNeil's victory also marks the first time in 131 years that Nova Scotians haven't given an incumbent party a second chance at running the province.

The Liberals were elected in 33 of the province's 51 ridings while the Progressive Conservatives captured 11 ridings and the New Democrats trailed

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Jamie Baillie
Progressive Conservative
Party of N.S.



Darrell Dexter
N.S. New Democratic Party



Stephen McNeil
N.S. Liberal Party

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Mobile asphalt plant being sold, 1.5 years after purchase

Transportation minister says decision to purchase plant for \$3.5M was not in taxpayers best interest

The Canadian Press | Posted: Feb 26, 2014 7:08 PM AT | Last Updated: Feb 26, 2014 7:08 PM AT



In 2011, the New Democratic government announced it was buying the mobile paving plant and said it would save taxpayers millions of dollars every year. The government said private contractors were charging too much to pave rural roads. (CBC)

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The government of Nova Scotia is putting its mobile asphalt plant up for sale, a year and a half after it went into operation.

The province's Transportation Department has brought in General Combustion Corp. to advertise and market the plant on its behalf beginning Monday.

General Combustion originally built and sold the plant to the previous NDP government in 2011 for \$3.6 million.

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Nova Scotia Asphalt Plant (2011-2013)



We Hardly Knew Ye!

Project Reviews

- Visual assessment of several 2013 preservation sections in Feb./March 2014
- Areas of concern noted by Project Engineers in fall 2013 on some projects
- Issues to be addressed in Spring 2014





Micro
Completed August 2013
Photo March 2014
3500 AADT

A photograph of a road surface showing a large, irregular crack and several yellow dashed lane markings. The crack runs diagonally across the frame, starting from the bottom left and extending towards the top right. The road is dark asphalt, and the yellow markings are clearly visible. The background shows a concrete curb and some gravel.

Micro

Completed August 2013

Photo March 2014

3500 AADT



Micro
Completed August 2013
Photo March 2014
3500 AADT



Seal Coat Type A:
Completed August 2013
Photo March 2014
950 AADT



Seal Coat Type A:
Completed August 2013
Photo March 2014
950AADT

Seal Coat Type A:
Completed August 2013
Photo March 2014
1980 AADT





Seal Coat Type A:
Completed August 2013
Photo March 2014
1980 AADT



Seal Coat Type A:
Completed August 2013
Photo March 2014
1980 AADT



Seal Coat Type B:
Completed Sept 2013
Photo Nov 2013



Seal Coat Type B:
Completed Sept 2013
Photo Nov 2013

A close-up photograph showing a person's hand holding a quantity of dark, angular aggregate material. The hand is positioned on the left side of the frame, with the palm facing upwards. The aggregate consists of numerous small, dark grey to black, angular particles of varying sizes, some with lighter, possibly white or yellowish, mineral inclusions. The background is a dense layer of the same aggregate material, which appears to be a surface of gravel or crushed stone. The lighting is natural, highlighting the texture and color of the aggregate. The text is overlaid on the right side of the image in a white, serif font.

Seal Coat Type B:
Completed Sept 2013
Photo Nov 2013



Seal Coat Type B:
Completed Sept 2013
Photo Feb 2014



Seal Coat Type B:
Completed Oct 2013
Photo March 2014
200 AADT

Seal Coat Type B:
Completed Oct 2013
Photo March 2014
200 AADT



Seal Coat Type B:
Completed Sept 2013
Photo March 2014
120 AADT





Seal Coat Type B:
Completed Oct 2013
Photo March 2014
200 AADT

Full Depth Reclamation

- Issues with several projects:
 - Centreline cracking - Single lift overlays
 - Frost heaving on several projects
 - Subgrade issues during construction:
 - Deflection during proof-rolling
 - Clay till



FDR + Single lift O/L:
Constructed July 2013
Photo Feb 2014
1150 AADT

An aerial photograph of a road with a yellow center line. The road surface is dark asphalt with visible tire tracks and a crack along the center line. The road is flanked by light-colored, possibly snow-covered or sandy, terrain. The text is overlaid on the left side of the road.

FDR + Single lift O/L:
Constructed July 2013
Photo Feb 2014
1150 AADT

A photograph of a paved road with a yellow line and a crack, with snow on the shoulder.

FDR + Single lift O/L:
Constructed August 2013
Photo March 2014
200 AADT



FDR (150 mm):
August 2013
500 AADT



FDR (150 mm):
August 2013
Removal of soft subgrade



FDR + Single lift O/L:
Constructed August 2013
Photo March 2014
500 AADT

Highway Funding in Nova Scotia 2014-2015

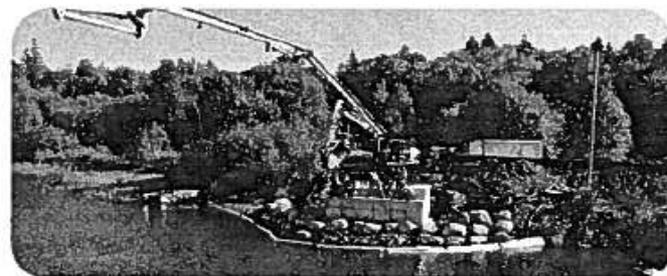
The total highway capital budget for 2014-15 is \$235 million. Additional operational funding for highway maintenance will be made available as part of the 2014-15 budget.

Capital funding for highway construction and maintenance comes from three sources:

- Provincial** -- \$209,300,000
 Highway funding in Nova Scotia includes all revenues collected through provincial gas taxes and registration of motor vehicles, as well as other funding provided by the provincial government.
- Federal** -- \$25,500,000
 Federal money to support highway improvement projects will be provided by the Building Canada Plan.
- Municipal** -- \$1,000,000
 Municipalities contribute on cost-shared projects in their areas.

How capital funding is invested

Major construction (new highways and bridges)	\$70,000,000
Asphalt and resurfacing	\$114,300,000
Bridge replacement /rehabilitation	\$35,500,000
Land purchase	\$4,000,000
Equipment, machinery, ferries	\$9,500,000
Highway designs, surveys, studies	\$1,700,000
Total	\$235,000,000



2014 Preservation Treatments

Preservation Budget (\$ Million)

Micro-Surfacing:	4.0
Seal Coat Type A:	3.0
Seal Coat Type B:	9.5

Reclamation Projects:

Type:	Projects:	CL Length (mi.):
CIR:	5	20
FDR:	1	5

Changes / New Treatments

- Specification change - Prime requirement removed for Seal Coat Type B:
 - Concerns over use of cut-back solvent
- Bio-Solvent emulsion prime trial planned:
 - Low VOC, similar penetration formulation
- Hot In-Place reclamation trial:
 - Create specification, candidate selection

Summary

- Budget for TIR seal coat / repaving program lost (\$10 M)
- Better candidate selection for all treatments
- Attention to workmanship key
- Assessment of 2013 projects to continue...if winter ends....

April in Nova Scotia



Questions?

